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Corporate Pension Risk Management and Corporate Finance

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Author's Note: The following is excerpted and based on the Society of Actuaries' research report entitled Corporate Pension Risk Management and Corporate Finance: Bridging the Gap between Theory and Practice in Pension Risk Management *by Liaw Huang and Minaz Lalani, published in August 2015.*

"Since the 2007–2008 recession, de-risking has become the most-discussed topic in corporate pension risk management. Despite this trend, the authors believe that the actuary's role in decision-making at a corporate strategic level regarding defined benefit (DB) pension plans has typically been confined to the pension silo; in other words, the actuary's advice regarding decision-making on corporate defined benefit plans is often limited to statutory and accounting requirements and typically without regard to corporate finance considerations at an enterprise level. However, over the past 10 years, major decisions regarding corporate DB pension plans, such as freezing of defined pension plans or transferring pension risks to insurers, have been made in a corporate finance framework at an enterprise level. Similarly, corporate pension funding policies and investment policies are being analyzed within a set of corporate finance metrics. Therefore, there is a need for actuaries to understand current corporate finance practices and be able to provide strategic and holistic solutions for corporate decision-makers."

To this end, the report, *Corporate Pension Risk Management and Corporate Finance: Bridging the Gap between Theory and Practice in Pension Risk Management* was completed by the authors to survey current literature to fill this void for actuaries.

The authors discuss the elements of a "strategic" pension risk management framework from a corporate finance perspective. By "strategic" the authors mean the level of how much pension risk a corporation should take and where on the corporation's capital structure the risks should be taken. An understanding of the following appears to be essential for developing a strategic pension risk management framework:

1. Key corporate metrics used by the corporation for operating their business and how corporate defined-benefit pension plans impact these metrics
2. Approaches to quantifying the trade-off between risk and capital
3. Empirical studies on how pension plans impact shareholder value

Based on current literature, it is clear that different corporations employ different processes for risk management and strategic planning, however they mostly always involve financial metrics and capital allocation procedures. In addition, any corporate action that may have a potential to result in negative market reactions is usually a "no-go" from the "get-go."

The most visible corporate metric impacted by pension plans is corporate leverage - for example, the debt to equity ratio. To calculate corporate leverage properly, it is important to use the augmented or holistic balance sheet, where pension assets and liabilities are integrated with other operating assets and liabilities. When pension liabilities are recognized as long-term debt, the debt to equity ratio usually increases. Realizing the insufficiency of the accounting balance sheet, the rating agencies have made adjustments to the calculation of various corporate metrics to take into account the impact of corporate pension plans.

A less recognized, but equally important, consideration is the impact of pension plans on a corporation's weighted average cost of capital. If the pension plan is not taken into account, the weighted average cost of capital may be overestimated. In their 2006 paper, Jin, Merton, and Bodie[1] looked at several companies and concluded that the overestimation could be as high as 30 percent.

Appropriately adjusting corporate metrics for pension plans is the first step toward strategic pension risk management. Next, a strategic pension risk management framework should consider the trade-off between holding equity capital and mitigating pension risk. The more risk a corporation assumes, the more capital is required. The authors explain,

"This trade-off is made explicit with financial companies that have capital requirements. Here the concept of value at risk is used. For example, a company may hold enough capital to survive a 1-in-200 year event with respect to its pension plans; that is, a company may want to have enough liquid assets or can raise additional funds to cover pension shortfall at the 99.5 percent level, so that the pension shortfall would not bankrupt the company."

"More generally, pension risks give rise to volatility in corporations' financial statements. How do corporations evaluate this volatility and decide how much to spend to mitigate pension risks? This is generally described as risk budgeting."

Besides using value at risk, two other approaches are possible. The first approach is the traditional sensitivity analysis, where

"… pension volatility is translated into its impact on corporate earnings and cash flows. The impact on earnings or cash flows is multiplied by a market multiple to estimate its impact on a corporation's stock price. Alternatively, the net present value of contributions is calculated."

"The other approach is based on the beta of a corporation's stock. Pension risks increase the beta of a corporation. By targeting a fixed beta, one can calculate how much equity capital is needed for a given level of pension risk. This approach is presented by Merton in his analysis of the weighted average cost of capital."

A detailed exposition of these concepts as well as numerical examples can be found in the report.

Finally,

"Empirical evidence helps to validate the perspective of corporate finance on pension plans, and provides helpful guides for selecting the right financial metrics to focus on. For example, corporate managers may not want to focus only on pension underfunding, but also on the size of the pension liability, and the relationship of pension liability to the market capitalization of the corporation, since these relationships tend to impact stock prices and credit spreads."

The authors conclude,

"To move toward a more holistic way of including pension plans in corporate planning and risk management, key financial metrics should be adjusted for pension and pensions should be included in the process of risk budgeting. Such information will in turn inform corporate decision-makers on the appropriate strategy for managing the pension plans. It is likely that different corporations will focus on different financial metrics and develop their own processes of risk management and capital allocation that are appropriate for their respective business. Thus it may not be possible to have a single process that will work for all corporations. Nevertheless, we have identified elements of pension analysis from a corporate finance perspective that can be integrated into such processes."

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ENDNOTE

[1] Jin, L., Merton, R., & Bodie, Z. (2006). Do a firm's equity returns reflect the risk of its pension plan? Journal of Financial Economics, (December). Retrieved from *http://www.sciencedirect.com/science/article/pii/S0304405X05002370*

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